

Some New Chinese Species of Begonia

BY

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Mr. T. T. Yü has had the kindness to send me a fine collection of Chinese Begonias for revision and determination. I am greatly indebted to him for the privilege of studying this collection. The result of this revision is a number of new species including two already recognised as new by Mr. Yü. With a few exceptions this material comes from the Province of Yunnan and shows once again how inexhaustibly rich this mountainous country is in interesting species.

Sect. *Begoniastrum**Begonia anceps* Irmsch., sp. nov.

Herba caulescens mediocris. Caulis floriferus basi repens, dein ascendens, circ. 25 cm. longus, 2-3 mm. crassus, simplex, parce foliatus, internodiis 2-5 cm. longis instructus, ferrugineo-crispulo-villosus, basi ad nodos fibrillosus. Stipulae caducae, obovato-oblongae, 5-6 mm. longae, 2.5-3 mm. latae, apice setiferae, dorso et margine ciliato-pilosae. Foliorum petioli 1.2-3.5 cm. longi, ut caulis pilosi; laminae membranaceae, supra setis conoideis minimis 0.2-0.3 mm. longis disperse obsitae, subtus in nervis crispulo-pilosae, inaequilaterales, ovatae, 5-9.5 cm. longae, 3.2-8 cm. latae, basi oblique cordatae, extus in lobum rotundatum 0.8-1.5 cm. longum et 1.7-3 cm. latum lineam nervi medii transgredientem productae, intus brevius lobatae, apice breviter acuminatae, margine duplicato-ciliato-denticulatae, nervis extrorsis basilaribus 3 et lateralibus 4, introrsis basilaribus 2-3 et lateralibus 3 suffultae. Cymae pauciflorae, 4 cm. longae, dichasium 1 ramis bifloris (?) instructum formantes, pedunculo 2.5 cm. longo et internodiis prim. 4 mm. longis instructae, crispulo-pilosae. Flores . . . Capsula trilocularis, in pedicello 12 mm. longo nutans, a latere ut in sect. *Platycentrum* asymmetrica nervo medio curvato instructa, oblique ovalis, 8-9 mm. longa, 7-8 mm. lata, utrinque plus minusve emarginata, triala; ala maior subtriangularis, deorsum versa, medio 3.5-7 mm. longa, margine superiore recto 11-13 mm. longo instructa, apice obtusa vel apiculata; ceterae multo angustiores, margine superiore descendente usque 6 mm. longae, medio 1.8 mm. longae, omnes capsulam utrinque 1-1.5 mm. transgredientes. Stili 3, 2-2.2 mm. longi, 2 mm. lati, breviter 2-ramosi. Placentae bifidae, undique ovuliferae.

YUNNAN: Ma-li-po, Gwan-gao, alt. 1000 m., under woods on rocks, fl. pink, fr. green. (C. W. Wang 86714, 10 Feb. 1940—type in Herb. Inst. Bot. Yunnan).

At first glance the characteristic asymmetrical capsules with their downward-directed large wing resemble the fruits of the section *Platycentrum* and one might suppose that they are also 2-celled. But the middle nerve on the side-surface between the larger and the smaller wing indicates that the ovary is 3-celled, as is also shown in the transverse section. From the shape of the ovary the new species is closely related to *B. morifolia* Yü, with which it forms a species-group within the section *Begoniastrum*.

B. Yüii Irmsch., sp. nov.

Herba perennis caulescens mediocris tubere subgloboso 1 cm. diametiente glabro ferrugineo parce fibrilloso folia basalia gerente instructa. Caules floriferi breves, erecti, 2.4–8 cm. longi, 1–2 mm. crassi, parce foliati, internodiis 1–2 cm. longis, cymas 2 caule longiores gerentes, glabri. Stipulae caulinae inferiores late ovatae, 1.5 mm. longae, basi 2 mm. latae, margine irregulariter pauciciliatae, superiores ovatae, 3 mm. longae, 1.5 mm. latae. Foliorum basaliū petioli 3–12 cm. longi, crispulo-pilosi, dein glabrescentes; laminae membranaceae, supra setis albidis 0.7–1.1 mm. longis in sicco paulum curvatis densiuscule obsitae, subtus in nervis ferrugineis et nervillis sparsim setosae, paulum inaequilaterales, late acuto-ovatae, 6.5–10.5 cm. longae, 5.5–8 cm. latae, basi cordatae, lobis paulum inaequalibus rotundatis approximatis 1–1.5 cm. longis, 2–3.5 cm. latis plus minusve sese obtegentibus instructae, apice saepe subito longiuscule acuminate, margine parce lobato-dentatae et argute duplicato-serratae, serraturis apiculatis ciliatisve instructae, nervis utrinque basilaribus 2–3 et lateralibus 2–3; folia caulina multo minora, petiolis usque 3 mm. longis et laminis 12 mm. longis serratis instructa. Cymae 11–14 cm. longae, dichasia 3 dein cincinnos pauciflores gerentes, pedunculo 8–9 cm. longo, internodiis prim. 1.5–3.5 cm. sec. 1–1.8 cm. longis suffultae. Bractae ovato-oblongae, inferiores 5–6 mm. longae, 2.5–3 mm. latae, margine hic illinc irregulariter ciliatae vel glabrae. Florum ♂ pedicelli usque 1 cm. longi, glabri; tepala rosea, 4, 2 exteriora late ovata, 8:6.5 mm., 2 interiora elliptica, 5.5:3 mm., glabra; staminum filamenta 1–1.5 mm. longa; antherae zygomorphae, ambitu obovatae vel subquadrangulares, turgidae, 0.6–0.7 mm. longae, apice vix emarginatae, connectivo haud producto et rimis in fronte sitis curvatis subparallelis instructae. Florum ♀ prophylla 2, rosea, in fructu caduca, ovarium involucrentia, transverse ovalia, saepe inaequalia, 4.5–6 mm. longa et 8–10 mm. lata, apice saepe emarginata, integra, extus dorso albedo-ciliata; pedicelli 12–10 mm. longi; tepala 5, magnitudine intus decrescentia, exterius 8:4.5 mm., interius 5:3 mm., glabra; stili 3, 1.8 mm. longi, ad 1/3 longitudinis in ramulos 2 fascia papillosa circumcinctos fissi; ovarium triloculare, ovale, 3–4 mm. longum, 2.5–3 mm. latum, longiuscule albedo-villosum, 3-alatum; ala maior longiuscule triangularis, 3.5–4.5 mm. longa, medio 1.5–2.3 mm. lata, sursum versa, margine superiore usque 5.5 mm. longo instructa; ceterae anguste triangulares, margine superiore subhorizontali 2.5 mm. longae; placentae bifidae, undique ovuliferae.

YUNNAN: Mien-ning, Po-shang, alt. 2500 m., under forest, on rock surface, herb perennial, 0.5–1 ft. high, fl. pink, common (T. T. Yü 17943, 8 Oct. 1938—*type* in Herb. Inst. Bot. Yunnan).

This species possesses five pistillate petals and thus recalls *B. asperifolia* Irmsch., which it also resembles very much in its reduced stem. But it differs from that species in its glabrous tepals, persistent bracts and its hairy ovary. Above all it differs from its kindred in the character of the two large bracteoles which envelop the ovary except the outer part of the large wing.

B. miranda Irmsch., sp. nov.

Herba perennis caulescens maiuscula. Caulis, qui adest erectus, tenuis, 11.5 mm. longus, cymas 2 laterales gerentes, internodio inferiore brevissimo

cymam longiorem gerente et superiore multo longiore 11 cm. longo cymam breviorē emittente instructus, verosimiliter gemma terminali reducta suffultus, sparsim irregulariter crispulo-pilosus. Stipulae . . . Folia caulina (= bractae cymarum) verosimiliter reducta, caduca. Folii basilaris petiolus 30 cm. longus, squamis fimbriiformibus 3-4 mm. longis deorsum versis disperse obsitus; lamina chartacea, supra setis conoideis brevissimis 0.3 mm. longis sparsim irregulariterque obsita, subtus in nervis prim. basin versus sparsim fimbriata, inaequilateralis, ambitu oblique ovata, 17 cm. longa, 15 cm. lata, extus in 3, intus in 2 lacinias porrectas subpartita, lacinia media acuminato-oblonga inferne late cuneata, 11.5 cm. longa, superne 6.5 cm., basi 3.7 cm. lata, utrinque unilobata, lacinia exteriorē superiore extus unilobata 8 cm. longa, 5 cm. lata, lacinii ceteris obovato- vel oblongo-acuminatis, 1.5-7 cm. longis instructa, basi oblique cordata, extus in lobum rotundatum 4 cm. longum et 6.5 cm. latum lineam nervi medii 0.5 cm. transgredientem producta, intus late rotundata, margine remote subobsoleteque repando-denticulata, nervis extrorsis basilaribus 4 et lateralibus 3, introrsis basilaribus 3 et lateralibus 3. Cymae pauciflorae, inferior 25 cm. longa, superior 12 cm. longa, 2-3 dichasia formantes, pedunculo 22 vel 9 cm. longo et internodiis prim. 10-15 mm. longis instructae. Florum 9 pedicelli 20 mm. longi; tepala 4, rosea, 2 exteriora late ovata, 15 mm. longa et 19 mm. lata, 2 interiora oblonga, 9 mm. longa, 5 mm. lata; staminum filamenta inferiora 1.2 mm., superiora usque 3 mm. longa; antherae obovato-cuneatae, apice cucullatim incurvae, connectivo angusto superne sensim paulum dilatato et rimis sublateralibus apice abrupte conniventibus instructae. Alabastri ♀ bracteolae 2, inaequales, altera late ovalis, 8.5 : 6 mm., altera oblonga, 8 : 4 mm., apice breviter acuminatae, glabrae; tepala 6, exteriora acuto-ovata; stili 3, bifidi; ovarium triloculare, obovatum, subaequaliter tripartitum; placentae bifidae.

YUNNAN: Ping-bien Hsein, Ma-ka-che, alt. 1600 m., on mount. slope, moist place or rock, leaf twig white hairs, dominant (C. W. Wang 83032, 11 Dec. 1939—type in Herb. Inst. Bot. Yunnan).

This new species is remarkable because, like *B. imitans* Irmsch. which is its nearest relative, it is very similar in the shape of its leaves to some species of *Platycentrum* like *B. truncatiloba* Irmsch. But the characters of the flowers show distinctly that it belongs to the section *Begoniastrum*. From *B. imitans* it differs in the larger and more widely lobulated leaves, more elongated anthers and above all in the two bracteoles at the base of the ovary. At present it must remain undecided whether the young shoot available arose upon a rhizome, as is after all probable. At the uppermost node of the stem, where occurs the last cyme, there are some small rudiments of leaves which may have been derived from stipules. Perhaps there was an apical bud which did not reach further development, as we find is the case with similar reduced stems.

Sect. *Coelocentrum*

B. obsolescens Irmsch., sp. nov.

Herba perennis caulescens mediocris. Caulis repens, subrhizomatoideus, saepe valde flexuosus, usque 10 cm. longus et 4 mm. crassus, raro ramosus, densiuscule foliatus, internodiis inferioribus brevibus 0.5 cm. longis, superioribus usque 1.5 cm. longis instructus, ferrugineo-puberulus, ad nodos

fibrillosus. Stipulae caducae, oblongae, 7.5 mm. longae, 3 mm. latae, in setam usque 1.5 mm. longam exeuntes, extus puberulae. Foliorum petioli 4-7 cm. longi, tenues, ferrugineo-pubescentes; laminae membranaceae, supra disperse breviterque setoso-pilosae, subtus in nervis et nervillis ferrugineo-puberulae, late ovatae, 4-6.5 cm. longae, 4-7.2 cm. latae, basi sinu aperto rotundato oblique cordatae, extus in lobum semiorbicularem 1.2-2.5 cm. longum et 2-4.5 cm. latum lineam nervi medii transgredientem productae, intus brevissime late lobatae, apice breviter acuminatae, margine minute distincteque denticulatae et in juventute ciliatae, in nervorum terminis dentibus paulum maioribus instructae, nervis extrorsis basilaribus 3-4 et lateralibus 3, introrsis basilaribus 2 et lateralibus 3. Cymae inconspicuae, pauci-(5-) florae, in flore usque 5 cm. longae, dichasium ramis bifloris flore ♀ terminatis suffultum formantes, pedunculo 3.2-4 cm. longo instructae. Bractae prim. suborbiculares, 8 mm. longae, aequilatae, margine ciliatae. Florum ♂ pedicelli breves, usque 1 cm. longi, puberuli; tepala 4, alba vel albo-rosea, 2 exteriora late ovata, 10 mm. longa, 9 mm. lata, extus puberula, 2 interiora late ovata vel ovalia, 8 mm. longa, 5 mm. lata, dorso inferne puberula; stamina numerosa, verosimiliter in unum latus spectantia; filamenta 1.5 mm. longa; antherae zygomorphae, obovato-oblongae, 1.2 mm. longae, curvatae, apice emarginatae, connectivo subnullo et rimis lateralibus superne abrupte conniventibus fere sese attingentibus instructae. Florum ♀ tepala 5, suborbicularia; stili 3, ad 1/2 longitudinis in ramulos 2 erectos fascia papillosa spiraliter torta circumcinctos fissi; ovarium puberulum, tripartitum; placentae parietales, stipitatae, bifidae.

YUNNAN: Ma-li-po, Hwang-ging-ying, alt. 1200 m., on rock crevice, under dense woods; fl. white to light pink (C. W. Wang 83828, 14 Jan. 1940—*type* in Herb. Inst. Bot. Yunnan).

A transverse section of the ovary shows that the placenta does not originate directly at the wall, but that firstly three narrow ledges which afterwards fork off, lead from the ovary-wall into the interior. The two fork-branches bend outward at right angles and bear the ovules. Two lamellae at a time are lying side by side in such a way that a triangular chamber remains free in the middle of the ovary; but in the upper part of the ovary they are so close together that there is no free space. In this development of the placentation one might imagine a transition from marginal to axillary. The wall of the ovary is very thick and consists of 8-10 layers of small cells.

A further characteristic of this species is that the edge of the larger lobe does not reach the petiole. The edge ends already 1-2 mm. before the petiole at the lowest leaf-nerve, so that the last bit of the sinus is formed by this nerve.

Begonia crispula Yü, sp. nov.

Herba maiuscula. Rhizoma repens, torulosum, usque 6 cm. longum et 1 cm. crassum, dense foliatum, crispulo-pilosum, fibrillosum. Stipulae late ovatae, 7-8 mm. longae, basi subaequilatae, apice acutae et setiferae, glabrae. Foliorum petioli longitudine variabiles lamina usque duplo longiores, 8-12 cm. longi, 2-3 mm. crassi, tota longitudine dense longeque crispulo-pilosi; lamina membranacea, supra obscure viridis, villis vel setis

disperse obsita, subtus purpureo-viridula, in nervis et nervillis crispulopilosa, inaequilateralis, ambitu late ovata vel orbiculari-ovata, 6-10 cm. longa, 5-9 cm. lata, basi valde obliqua, apice breviter acuminata vel acuta, margine extus obsolete grosse repando-dentata, praeterea minute dense ciliato-denticulata, nervis extrorsis basilaribus 3-4 et lateralibus 1-2, introrsis basilaribus 3 et lateralibus 1-2 instructa. Inflorescentiae rhizomatinae, erectae, cymosae, multiflorae, pedunculo 11-15 cm. longo crispulopilosa instructae; bractae ovato-oblongae 5-7 mm. longae, 2-3 mm. latae, margine crispulo-ciliatae, apice acuminatae. Florum ♂ pedicelli 10-15 mm. longi, crispulo-pilosi; tepala 4, rosea, 2 exteriora late ovata usque orbicularia, 10-11 mm. longa et aequilata, obtusa, extus crispulo-villosa, 2 interiora oblongo-obovata, 8 mm. longa, 3 mm. lata, glabra; staminum 30-40 filamenta antheris aequilonga vel breviora, columnae usque 1 mm. longae insidentia; antherae extrorsae, zygomorphae, curvatae, turgidae, ambitu late obovatae vel suborbiculares, 1 mm. longae, apice obtusae vel emarginatae, rimis in frontem spectantibus et apice breviter conniventibus, connectivo angusto instructae. Florum ♀ pedicelli 15-20 mm. longi, crispulo-pilosi; tepala 3, 2 exteriora late ovalia usque orbicularia, 1 cm. longa et subaequilata, extus crispulo-villosa, 1 interiorius ovatum, 8 mm. longum, 4 mm. latum; stili 3, 3 mm. longi, basi connati, ad $1/2$ longitudinis in ramulos 2 fascia papillosa circumcinctos fissi; ovarium uniloculare, ovale, tripartitum, alis triangulo-rotundatis, longe crispulo-pilosis obsitum; placentae parietales bilamellatae.

YUNNAN: Foo-ning, alt. 1000 m., April 1939. (C. W. Wang 88908—type in Herb. Yun. Bot. Inst., Kunming).

This new begonia is allied to *B. Porteri* Lévl. but differs in its many-flowered cymes and in the distinctly crispulo-pilose hairs on the petioles, peduncles, pedicels, fruits, and on the outsides of the tepals. By the latter characteristics, it can be also easily distinguished from *B. Morsei* Irmscher. (T.T. Yü.)

Sect. *Platycentrum*

B. psilophylla Irmsch., sp. nov.

Herba perennis maiuscula glaberrima tubere subgloboso 1.5 cm. longo folia basalia et caules floriferos gerente basi valde fibrilloso instructa. Caulis floriferus erectus flexuosus, qui adest circ. 30 cm. longus, simplex, parce (4-) foliatus, internodiis 5-8 cm. longis instructus, cymas 3 gerens, ferrugineus. Stipulae caducae. Foliorum basaliū petioli 20-22 cm. longi, 2.5 mm. crassi, fol. caulinarum 4-9 cm. longi; laminae chartaceae, utrinque glabrae, solum in juventute sub lente supra versus marginem minute sparsim pilosae, subaequilaterales, ambitu cordiformes, late acuto-ovatae, 8-12 cm. longae, 6-10 cm. latae, basi paulum obliquae, leviter cordatae, extus in lobum rotundatum 0.8-1.1 cm. longum et 3-4 cm. latum, intus in lobum breviorē usque 0.5 cm. longum et 3 cm. latum productae, apice abrupte in acumen 1.5-2 cm. longum medio 1.5-2.5 mm. latum contractae, margine remote et leviter denticulatae, in nervorum prim. terminis dentibus latis instructae, nervis extrorsis basilaribus 4 et lateralibus 2, introrsis basilaribus 3-4 et lateralibus 2. Cymae pluriflorae, in fructu 14-20 cm. longae, dichasia 3, dein ramos paucifloros gerentes, pedunculo 12-17 cm. longo et internodiis prim. 2.3-3 cm. longis, sec. 7-10 mm.

longis instructae. Bractee prim. lineari-oblongae, 12:5 mm., subacutae, superiores oblongae, 6.5-7:3.5 mm. Florum ♂ tepala 4, 2 exteriora in alabastris late ovata, 5:5 mm. 2 interiora minora; staminum filamenta antheris subaequilonga; antherae oblongae usque lineari-oblongae, 0.7-1.5 mm. longae, connectivo angustissimo apice in lobum ovatum producto et rimis paulum in frontem spectantibus suffultae. Florum ♀ pedicelli 7-15 mm. longi, supra medium bracteola una vel duabus ovato-acuminatis 2-3.5 mm. longis instructi; tepala 5, fere aequalia, ovalia, 8-10:5-7 mm., obtusa; stili 2, crassiusculi, 3.5 mm. longi, 4.5 mm. lati, ad 1/2 longitudinis in ramulos 2 fascia papillosa externe valde crispata circumcinctos fissi; ovarium biloculare, a latere obovato-oblongum, 6:2.5 mm. trialatum; ala maior decurrens, dein horizontaliter patens, 6-7 mm. longa, medio 3-3.8 mm. lata, extus truncata; ceterae angustae rotundatae, medio 1.5 mm. longae; placentae bifidae.

S.E. YUNNAN: Hokou, Ma-hwang-po, alt. 700 m., under woods, on shady rocks, rootstocks collected by Mr. Yü and cultivated in the greenhouse of the Yunnan Botanical Institute, fl. pink, blooming from Feb. to April 1942 (*F. T. Wang* 2523—*type* in Herb. Inst. Bot. Yunnan).

This species is one of the most striking among the Chinese *Platycentra* through its distinctly cordate oblique leaves few in number, and remarkable also for their long apex and glabrous surface; in their youth they have scattered fine hairs only on the upper side at the edge. Above the middle the pedicel of the pistillate flowers bears 1 or 2 small bracteoles which in the latter case are not opposite and bear no axillary buds.

B. *laminariae* Irmsch., sp. nov.

Herba perennis caulescens rhizomatosa. Rhizoma, quod adest repens, tuberiforme, 3 cm. longum, 1.3 cm. crassum, folia basalia et caules floriferos gerens, longiuscule hirsutum. Caulis floriferus erectus, 25 cm. longus, 2-folius, cymas 2 gerens, internodio inferiore 24 cm. superiore 1 cm. longo instructus. Stipulae . . . Folii basilaris petiolus 35 cm. longus, inferne parce hirsutus; lamina charactea, glabra, valde inaequaliteris, ambitu suborbicularis, 21 cm. longa, 23 cm. lata, palmati-7-partita, laciniis curvatis lanceolatis mediis 17-18 cm. longis et 4-5 cm. latis supra medium latissimis inferne cuneatis, apice sensim acuminatis margine exteriori grosse leviterque pauci-dentatis et irregulariter leviter repandis, extus nervis 3-4 suffultis instructa, basi late leviter cordata. Flores. . . Cymae fructiferae 14 cm. longae, glabrae, pauciflorae, dichasia 1-2 gerentes, pedunculo 9 cm. longo et internodiis prim. 5-7 mm. longis instructae. Capsula in pedicello usque 4 cm. longo curvato nutans, bilocularis, a latere curvata, oblique obovato-oblonga, 17-18 mm. longa, 4-5 mm. lata, inferne angustata, inaequaliter trialata; ala maior valde descendens sublinguiformis, 13-16 mm. longa, medio 12-13 mm. lata, margine superiore convexo 17-18 cm. longo instructa, extus rotundata, nervis longitudinalibus crassiusculis basi liberis distincte exsertis instructa; ceterae multo angustiores, superne 5.5-6.5 mm. longae, inferne angustatae, extus rotundatae; omnes basi capsulam transgredientes et decurrentes.

S.E. YUNNAN: Ma-li-po, Hwang-jin-in, alt. 1200 m., rocky hill (*C. W. Wang* 83161—*type* in Herb. Inst. Bot. Yunnan).

This species appears to be most closely related to *B. circumlobata* Hance, but differs in the more considerable proportions of all its parts.

B. macrotoma Irmsch., sp. nov.

Herba perennis caulescens rhizomatosa 25-50 cm. alta. Rhizoma tuberiforme ascendens 4 cm. longum, 2 cm. crassum, valde fibrillosum. Caulis floriferus erectus, qui adest 40 cm. longus, haud ramosus, parce (3-) foliatus, internodio inferiore 21 cm. longo et medio 14.5 cm. longo instructus, glaber. Stipulae caducae, superiores inaequilaterales, maiusculae, ovatae, 19 mm. longae, 12 mm. latae, glabrae. Foliorum caulinarum petioli 5.5-7.5 cm. longi, glabri; laminae membranaceae, supra setis brevibus usque 0.6 mm. longis disperse obsitae, subtus glabrae, inaequilaterales, ambitu ovatae, 10-14 cm. longae, subaequilatae, 6-partitae, lacinia media ambitu oblique ovata, 7.5-11 cm. longa, 2.5-3 cm. lata, basi breviter cuneato-contracta, paucilobata extus lobo inferiore ovato-acuminato 3-4 cm. longo basi 1.5-2.2 cm. lato, intus lobis duobus multo brevioribus ornata, lacinii ceteris sursum versis curvatis lanceolatis 5-10 cm. longis, basi 1.6-2 cm. latis, extus breviter pauci-lobatis instructae, basi oblique cordatae, extus in lobum 4-5.5 cm. longum lineam nervi medii paulum transgredientem productae, intus breviter lateque rotundato-lobatae, margine late leviterque ciliato-serrato-dentatae, nervis extrorsis basilaribus 4 et lateralibus 4-5, introrsis basilaribus 3 et lateralibus 3-4. Cymae pauciflorae, circ. 14 cm. longae, dichasia 3 gerentes, pedunculo 11 cm. longo et internodiis prim. 7-8 mm. longis, sec. 1.5-2.5 mm. longis suffultae. Bractae prim. ovales, 13:8 mm., tert. 9:6 mm. apice obtusissimae. Flores rosei; alabastrorum ♂ tepala 4, 2 exteriora late ovalia, 10:7 mm., obtusissima, 2 interiora ovata, 7:5 mm.; stamina numerosa; filamenta inferiora 1 mm., superiora usque 2 mm. longa; antherae oblongo-cuneatae, 1-1.2 mm. longae, thecis crassiusculis, connectivo angustissimo, in antheris superioribus in lobum latum semiorbicularem planum 0.2-0.25 mm. longum productum, rimis lateralibus instructae. Florum ♀ pedicelli 14-20 mm. longi; tepala 3, 2 exteriora ovalia 15:11 mm., interius ovale 12:7 mm.; stili 2.5-6 mm. longi, ad $\frac{1}{2}$ longit. in ramulos 2 fascia papillosa semel spiralter torta circumcinctos fissi; ovarium biloculare, in fronte obovoideum, 12 mm. longum, trilatum; ala maior parva valde deorsum versa, 4 mm. longa et 3 mm. lata; ceterae anguste triangulares, 3 mm. longae.

YUNNAN: Mianning, Hsiao-kuan-shan, alt. 2350 m., in ravine near by stream, herb perennial, ht. 1-2 ft., fl. light pink (*T. T. Yü* 7778, 29 Sept. 1938—*type* in Herb. Inst. Bot. Yunnan).

As regards the shape of the leaves, this species stands between *B. truncatiloba* Irmsch. and *B. pedatifida* Lévl. Vegetatively it differs from the former in having longer leaf segments, from the latter in the larger flowers and much broader not so deeply cleft leaves. The stipules and flowers afford further differences.

B. dryadis Irmsch., sp. nov.

Herba caulescens rhizomatosa mediocris. Rhizoma repens torulosum usque 8 cm. longum et 1.5 cm. crassum, glabrum, valde fibrillosum. Caulis floriferus erectus, brevis, qui adest 6.5 cm. longus, paucifolius, ferrugineo-crispulo-pubescent. Stipulae triangulari-ovatae, 13-15 mm. longae, medio

5 mm. latae, apice sensim in setam brevem exeuntes, glabriusculae. Folia rhizomatina et caulina ambitu aequalia; petioli basalius usque 15 cm. longi, caulinarum 4.5 cm. longi, ut caulis pilosi; laminae chartaceae, juniores (in n. 76522) supra disperse minuteque pilosae, dein glabrescentes, subtus in nervis ferrugineo-puberulae, ambitu late ovatae vel suborbiculari-ovatae, 7–12 cm. longae, 5.5–11 cm. latae, basi oblique cordatae, extus in lobum rotundatum 1.7–4 cm. longum et 3–6.5 cm. latum lineam nervi medii attingentem vel transgredientem productae, intus breviter lateque lobatae, apice in acumen 0.5–1 cm. longum contractae, margine subintegrae, irregulariter leviterque repandae vel extus dentibus paucis latis brevissimis instructae, nervis extrorsis basilaribus 4–5 et lateralibus 3, introrsis basilaribus 3 et lateralibus 2–3. Cymae caulinae, dichasium et dein cincinnos trifloros flore ♀ terminatos gerentes, pedunculo in flore 7 cm., in fructu 11–16 cm. longo et internodiis prim. 0.5–2 cm. longis suffultae. Bractae late ovatae vel subovales, 8–12 mm. longae, 6–8 mm. latae, obtusae, integrae, glabrae, Florum ♂ pedicelli circ. 2 cm. longi, glabri; tepala 4, roseo-alba, 2 exteriora ovata, 18 mm. longa et 12 mm. lata, glabra, 2 interiora obovata, 15 mm. longa, et 11 mm. lata; stamina numerosa, columnae 2 mm. longae insidentia; filamenta inferiora 1.5 mm., superiora 2.5 mm. longa; antherae oblongae, 1–1.6 mm. longae, connectivo angusto apice in lobum triangularem $\frac{1}{2}$ antherae metientem in sicco reflexum producto et rimis hiantibus apice in frontem conniventibus instructae. Florum ♀ tepala in alabastro 5. Capsula in pedicello 2 cm. longo nutans, bilocularis, a latere obovato-oblonga, curvata, 11–13 mm. longa, 5 mm. lata, inferne contracta, inaequaliter 3—alata; ala maior deorsum versa breviter linguiformis margine superiore concava 19 mm. longa, medio 11 mm. lata, nervis paucis grosse reticulata; ceterae ambitu subrectangulares, 5–6 mm. longae, apicibus obtusis instructae, omnes capsulam basi 2–3 mm. transgredientes.

YUNNAN: Lan-Tsang Hsien, alt. 1400 m., border of woods (C. W. Wang 76522, May 1936, in fructu—Herb. Inst. Bot. Yunnan); Kuen-ger, Che-li Hsien, alt. 1100 m., mixed forest, ravine (C. W. Wang 79349, Oct. 1936, in flore—type in Herb. Inst. Bot. Yunnan).

Doubtlessly both numbers belong to the same species and complete each other, as the former bears fruit, the second at least already developed ♂ flowers. The species is related to *B. Dielsiana* Pritz.

B. Tsaii Irmsch., sp. nov.

Herba perennis acaulis rhizomatosa gracilis. Rhizoma repens torulosum 4 cm. longum et 4 mm. crassum ramosum dense foliatum. Stipulae . . . Foliorum petioli tenuissimi, 9–10 cm. longi, pilis ferrugineis subhorizontaliter patentibus in sicco crispulis 2–3 mm. longis obsiti, inferne glabrescentes; laminae membranaceae, supra pilis longis 2–4 mm. longis setiformibus in sicco saepe crispulo-curvatis disperse obsitae, subtus in nervis et nervillis sparsim crispulo-pilosae, nervis distincte sed laxe reticulatim conjunctis instructae, ambitu ovatae, 5–8 cm. longae, 3.5–5.5 cm. latae, basi haud valde obliquae, leviter cordatae, extus in lobum rotundatum 5–12 mm. longum et 13–25 mm. latum lineam nervi medii haud transgredientem productae, intus brevius lobatae, apice sensim breviter acuminatae, margine saepe parce obtuse angulares vel leviter paucidentatae, praeterea minute ciliato-denticulatae, nervis extrorsis basilaribus 3 et lateralibus 3, introrsis

basilaribus 2 et lateralibus 2. Cymae graciles, rhizomatinae, pauciflorae, in fructu 9-12 cm. longae, dichasia 2 gerentes, parce crispulo-pilosae, pedunculo 8-10 cm. longo et internodiis prim. 1.5-10 mm. longis instructae. Flores . . . Capsula in pedicello 14-17 mm. longo nutans, bilocularis, inter alas minores suborbicularis, 6-7 mm. diametens, sub lente minute purpureo-pilosa, subaequaliter 3-alata; ala maior deorsum versa subtriangularis, margine superiore 11-13 mm. longa, medio 6-8 mm. longa, 4-7 mm. lata; ceterae triangulares, margine superiore subhorizontali 7.5-8.5 mm. longae, medio 3 mm. longae, omnes apice acutae, basi capsulam 2 mm. transgredientes.

YUNNAN: Ping-pien Hsein, alt. 1500 m., by stream in woods (*Tsai* 62727, 17 July 1934—*type* in Herb. Inst. Bot. Yunnan).

This species is evidently closely related to *B. Duclouxii* Gagn.; it differs in the non-lobed, at the most polygonally blunt-angular, scantily hairy leaves, but above all in a further reticulation of the veins of the leaves. The cymes arise distinctly from the rhizome.

B. villifolia Irmsch., sp. nov.

Herba caulescens maiuscula. Caulis, qui adest 23 cm. longus, 3-4 mm. crassus, parce foliatus, internodiis usque 8.5 cm. longis instructus, in sicco striatus, pilis horizontaliter patentibus in sicco ferrugineis crispulis, in vivo albis obsitus. Stipulae oblongo-ovatae, 10 mm. longae, medio 4-5 mm. latae, apice setiferae, extus crispulo-pilosae. Foliorum petioli longitudine variabiles, inferiores usque 14 cm., superiores 3 cm. longi, ut caulis dense pilosi; laminae subchartaceae, supra pilis gilvis tenuibus vix crispulis 1.5-2 mm. longis villosae, subtus pilis aequalibus paulum minoribus obsitae, in nervis dense ferrugineo-pilosae, valde inaequilaterales, ambitu late ovatae, 9-15 cm. longae, 7-13 cm. latae, varie grosse dentato-angulatae vel dentato-lobatae, lobis hic illinc longiuscule acuminatis, basi oblique cordatae, extus in lobum subsemiorbicularem 2.5-5.5 cm. longum et 4.5-8 cm. latum lineam nervi medii usque 1 cm. transgredientem productae, intus paulum lobatae vel rotundatae, apice sensim acuminatae, margine minute leviter denticulatae, pilis longitudine variabilibus usque 2 mm. longis purpureis villosae, nervis extrorsis basilaribus 4-5 et lateralibus 3, introrsis basilaribus 3 et lateralibus 2. Cymae pedunculo 7 cm. longo et 3 mm. crasso, internodiis prim. 15-17 mm. longis instructae. Flores. . .

S.E. YUNNAN: Ping-bien Hsien, Ta-mu-kae-chien, alt. 1600 m., border of woods, moist place, leaf margin red, with white hairs on petiole (*C. W. Wang* 83071, Dec. 1939—*type*).

Although flowers and fruits are missing, the vegetative characters are so pronounced that I propose a new species. The shape of the leaves, it is true, resembles some *Laciniata*-specimens; but the hairy covering with long thin villi, the red cilia on the edge of the leaves and the sticking-out of the villi on the petioles vary so much from the pubescence of *B. laciniata* Roxb., that it seems impossible to join the above specimens to that species.

B. laciniata Roxb. euta. loc. *laevifolia* Irmsch.

Subglabra. Foliorum petioli minute ferrugineo-villosi, 11.5-20 cm. longi; laminae magnae, supra subglabrae, praecipue versus marginem

setis perpaucis 0.2-0.35 mm. longis obsitae, subtus in nervis ut petiolos pilosae, ambitu late ovatae, usque 14 cm. longae, 15 cm. latae, dentato-angulatae vel lobatae, lobis late triangularibus usque 3 cm. longis et basi 3-4 cm. latis acuminatis instructae, margine sinuatae subintegrae vel leviter irregulariterque dentatae, basi oblique cordatae, extus in lobum 4-5.5 cm. longum et 8-10 cm. latum lineam nervi medii transgredientem productae, intus brevius lobatae. Flores rosei; ♂ tepala exteriora late avata, 21:18 mm., interiora ovalia, 17:7 mm., dorso pilis minutis malleiformibus et basin versus villis 350-650 μ longis pluriseriatis obsita.

YUNNAN: rootstock collected from Hokou, cultivated in the greenhouse of the Yunnan Botanical Institute, fl. pink, 5 cm. in diam., blooming in Nov. and Dec. 1942 (F. T. Wang 2522—*type* in Herb. Inst. Bot. Yunnan).

This form is at once outstanding by reason of the glabrous nature of the leaf-surface, as it bears only rarely the short setae of *B. laciniata* Roxb. On the tepals the very long uniseriate hairs are missing.

B. Smithiana Yü sp. nov.

Herba acaulis vel breviter caulescens. Rhizoma ascendens, torulosum, dense foliatum, tenuiter fibrillosum, caules floriferos breviusculos 6 cm. longos axillares suberectos emittens. Stipulae ovatae, 3.5-5 mm. longae, 2-3 mm. latae, apice acuminatae, glabrae. Foliorum petioli longitudine valde variabiles, 8-25 cm. longi, tenues sparse crispulo-pilosi; lamina membranacea, supra setis brevibus sparsim obsita, subtus in nervis pilosi, ambitu ovata vel oblongo-ovata, 6-9 cm. longa, 5-8 cm. lata, basi oblique cordata, pauci-lobata, lobis plerumque triangularibus, 1-4 cm. longis et 1-3 cm. latis, acutis rarius paulum sensim acuminatis, serratis instructa. Inflorescentiae caulinae, cymosae, pauciflorae, dichasia 2 formantes, pedunculo 12-15 (-25) cm. longo, glabro instructae. Florum ♂ pedicelli 12-20 mm. longi; tepala 4, 2 exteriora late ovata, 10-12 mm. longa et subaequilata, obtusa, integra, extus dorso pauci-setosa, 2 interiora oblongo-ovata, 6-8 mm. longa, 3-4 mm. lata, obtusa, integra, glabra; staminum circ 30 filamenta basi breviter connata, antheris aequilonga vel breviora; antherae obovatae, 1 mm. longae, connectivo apice in appendicem latum rotundum producto. Florum ♀ tepala 3 vel 4, exteriora late ovata, 7-8 mm. longa et aequilata, interius angustius, ovale usque oblongo-obovatum, 4-5 mm. longum et 2-3 mm. latum, omnia integra, exteriora dorso pauci-setosa; styli 2, ad $\frac{1}{3}$ longitudinis in ramulos 2 fascia minute papillosa angusta serpentina instructos fissi; ovarium biloculare, complanatum, a latere obovoideum, 6-7 mm. longum, 4-5 mm. latum, sparsim crispulo-pilosum, inaequaliter trialatum, ala maiore subtriangulari infra apicem affixa, ceteris angustioribus; placentae bipartitae.

KWEICHOW: Fan-chin-shan, Ta-ho-yen, alt. 980 m., rocky slope in shady forest, succulent herb, perianth pink, stamens yellow, stem and petioles veined red. Sept. 3, 1931. Coll. by A. N. Steward, C. Y. Chiao and H. C. Cheo 342 (*type*), identified as *B. fimbristipula* Hance in Herb. Univ. Nanking. Same locality, alt. 1560 m., under woods, fl. pink, 19 Aug. 1932. T. H. Tu 3637. Same locality, Ma-tao-ho, alt. 1320 m., upon rocks, fl. pink. 14 Sept. 1932. T. H. Tu 3856.

This new *Begonia* with triangular-lobed leaves seems to be nearly related to the polymorphic *Begonia laciniata* Roxb. but differs from that species in the subcaulescent habit, the female flowers with three or four tepals, and the simpler two-branched stigma.

This new species is named in honour of Prof. Sir William Wright Smith, Regius Keeper of the Royal Botanic Garden, Edinburgh, to whom I wish to express my sincere gratitude for guidance and encouragement.

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